

Mr. Daniel Swartz
Colonial Brick Corporation
P.O. Box 365
Cayuga, Indiana 47928

Re: **165-11642**
Second Administrative Permit Amendment to
Part 70 165-7633-00002

Dear Mr. Swartz:

Colonial Brick Corporation was issued a Part 70 permit on January 15, 1999, for a stationary clay processing and brick manufacturing plant. A letter requesting a modification to Kiln 3 was received on November 3, 1999. Modification of the kiln was approved to be constructed under Minor Source Modification 165-11525-00002. Pursuant to the provisions of 2-7-11, the permit is hereby administratively amended as follows to incorporate the modification of the kiln and to grant the source approval to operate:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
[326 IAC 2-7-5(15)]

The source consists of the following permitted emission units and pollution control devices:

(a) One brick firing operation, consisting of the following equipment:

- (1) Six (6) small Periodic Brick Kilns each with a rated heat input of 4 mmBtu per hour, burning a 57% coal and 43% sawdust mixture, identified as K-3, K-5, K-6, K-7, K-9 and K-10, each with a maximum capacity of 460.87 pounds of brick per hour, and exhausting through stacks S-2, S-5, S-6, S-7, S-9 and S-10, respectively (K-6 and K-9 were damaged in a flood and were repaired in 1998),

Kiln 3 (identified as K-3) is being reconstructed to replace the original kiln which was approximately 90 years old and beyond repair/maintenance. The new kiln will be identical in size, capacity, and Btu input as the original kiln.

- (2) Five (5) large Periodic Brick Kilns each with a rated heat input of 5 mmBtu per hour, burning a 57% coal and 43% sawdust mixture, identified as K-1, K-2, K-4, K-8 and K-11, each with a maximum capacity of 625.5 pounds of brick per hour, and exhausting through stacks S-1, S-1, S-2, S-4 and S-6, respectively (K-4 was damaged in a flood and was repaired in 1998), and

All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this amendment and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Autumn Marker, at (800) 451-6027, press 0 and ask for Autumn Marker or extension (3-0242), or dial (317)233-0242.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

Attachments

AMM

cc: File - Vermillion County
U.S. EPA, Region V
Vermillion County Health Department
Air Compliance Section Inspector - Marc Goldman
Compliance Data Section - Karen Nowak
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

**PART 70 OPERATING PERMIT
and ENHANCED NEW SOURCE REVIEW
OFFICE OF AIR MANAGEMENT**

**Colonial Brick Corporation
817 West Park St.,
Cayuga, Indiana 47928**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T165-7633-00002	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Management	Issuance Date: January 15, 1999

First Administrative Amendment 165-10605, issued March 4, 1999.
Minor Source Modification 165-11525, issued December 22, 1999.

Second Administrative Permit Amendment: 165-11642	Pages Affected: 5 and 30
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

SECTION A

SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a stationary clay processing and brick manufacturing plant.

Responsible Official: Daniel A. Swartz
Source Address: 817 West Park Street, Cayuga, Indiana, 47928
Mailing Address: P.O. Box 365, Cayuga, Indiana, 47928
SIC Code: 3251
County Location: Vermillion
County Status: Attainment for all criteria pollutants
Source Status: Part 70 Permit Program
Major Source, under PSD

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

The source consists of the following permitted emission units and pollution control devices:

(a) One brick firing operation, consisting of the following equipment:

- (1) Six (6) small Periodic Brick Kilns each with a rated heat input of 4 mmBtu per hour, burning a 57% coal and 43% sawdust mixture, identified as K-3, K-5, K-6, K-7, K-9 and K-10, each with a maximum capacity of 460.87 pounds of brick per hour, and exhausting through stacks S-2, S-5, S-6, S-7, S-9 and S-10, respectively (K-6 and K-9 were damaged in a flood and were repaired in 1998),

Kiln 3 (identified as K-3) is being reconstructed to replace the original kiln which was approximately 90 years old and beyond repair/maintenance. The new kiln will be identical in size, capacity, and Btu input as the original kiln.

- (2) Five (5) large Periodic Brick Kilns each with a rated heat input of 5 mmBtu per hour, burning a 57% coal and 43% sawdust mixture, identified as K-1, K-2, K-4, K-8 and K-11, each with a maximum capacity of 625.5 pounds of brick per hour, and exhausting through stacks S-1, S-1, S-2, S-4 and S-6, respectively (K-4 was damaged in a flood and was repaired in 1998), and

(b) One (1) grinder operation, operating within the grinder building, which has no exhaust, consisting of the following equipment:

- (1) One (1) Cayuga Brick Clay Grinder, identified as UV-9, with a maximum capacity of 12.8 tons of raw clay per hour,
- (2) One (1) Maco Apron conveyer, with a maximum capacity of 15 tons of raw clay per hour, operating within the grinder building, which has no exhaust,
- (3) One (1) shop built apron conveyor, with a maximum capacity of 15 tons of raw clay per hour,
- (2) One (1) McClanahan Single Roll 24" x 36" crusher, with a maximum capacity of 20 tons of raw clay per hour,

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)] One brick firing operation, consisting of the following equipment:

- (1) Six (6) small Periodic Brick Kilns each with a rated heat input of 4 mmBtu per hour, burning a 57% coal and 43% sawdust mixture, identified as K-3, K-5, K-6, K-7, K-9 and K-10, each with a maximum capacity of 460.87 pounds of brick per hour, and exhausting through stacks S-2, S-5, S-6, S-7, S-9 and S-10, respectively (K-6 and K-9 were damaged in a flood and were repaired in 1998), and

Kiln 3 (identified as K-3) is being reconstructed to replace the original kiln which was approximately 90 years old and beyond repair/maintenance. The new kiln will be identical in size, capacity, and Btu input as the original kiln.
- (2) Five (5) large Periodic Brick Kilns each with a rated heat input of 5 mmBtu per hour, burning a 57% coal and 43% sawdust mixture, identified as K-1, K-2, K-4, K-8 and K-11, each with a maximum capacity of 625.5 pounds of brick per hour, and exhausting through stacks S-1, S-1, S-2, S-4 and S-6, respectively (K-4 was damaged in a flood and was repaired in 1998).

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1]

Pursuant to 326 IAC 7-1.1-1 (Sulfur Dioxide Emissions Limitations):

- (a) The SO₂ emissions from the six (6) small periodic brick kilns (ID K-3, K-5, K-6, K-7, K-9 and K-10) and the five (5) large periodic brick kilns (ID K-1, K-2, K-4, K-8 and K-11) shall not exceed six (6) pounds per mmBtu of coal combustion.
- (b) The sulfur content of the coal delivered to the six (6) small periodic brick kilns (ID K-3, K-5, K-6, K-7, K-9 and K-10) and the five (5) large periodic brick kilns (ID K-1, K-2, K-4, K-8 and K-11) shall not exceed 4.12% by weight, providing the fuel mixture remains 57% coal and 43% sawdust.

D.1.2 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Process Operations):

- (a) The allowable PM emission rate from each of the six (6) small periodic brick kilns (ID K-3, K-5, K-6, K-7, K-9 and K-10) shall not exceed 1.53 pounds per hour when each operating at a process weight rate of 460.87 pounds per hour.
- (b) The allowable PM emission rate from each of the five (5) large periodic brick kilns (ID K-1, K-2, K-4, K-8 and K-11) shall not exceed 1.88 pounds per hour when each operating at a process weight rate of 625.5 pounds per hour.

The pound per hour limitation was calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.1.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device.

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for a Part 70 Administrative Permit Amendment

Source Background and Description

Source Name:	Colonial Brick Corporation
Source Location:	817 West Park Street, Cayuga, Indiana 47928
County:	Vermillion County
SIC Code:	3251
Operation Permit No.:	T165-7633-00002
Operation Permit Issuance Date:	January 15, 1999
Administrative Permit Amendment No.:	165-11642-00002
Permit Reviewer:	Autumn M. Marker

The Office of Air Management (OAM) has reviewed a modification application from Colonial Brick Corporation relating to the construction of the following emission units and pollution control devices:

- (a) A Periodic Brick Kiln, identified as Kiln 3, with a maximum capacity of 460.87 pounds of brick per hour.

Kiln 3 (identified as K-3) is being reconstructed to replace the original kiln which was approximately 90 years old and beyond repair/maintenance. The new kiln will be identical in size, capacity, and Btu input as the original kiln.

The reconstruction of Kiln 3 does not change any rule applicability or trigger any new rule applicability. The reconstructed Kiln 3 will have the same requirements and monitoring as the original kiln. The Minor Source Modification (165-11525-00002) reviewed the Prevention of Significant Deterioration (PSD) applicability of the new kiln. The only change to the Part 70 Permit will be to the descriptive information.

History

On November 3, 1999, Colonial Brick Corporation submitted an application to the OAM requesting to reconstruct Kiln 3 at their existing plant. Colonial Brick Corporation was issued a Part 70 permit on December 14, 1998.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Part 70 Administrative Permit Amendment be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on November 3, 1999.

Emission Calculations

See Appendix A of this document for detailed emissions calculations.

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	1.44
PM-10	1.25
SO ₂	20.88
VOC	0.04
CO	0.61
NO _x	6.29

Justification for Modification

The Part 70 Operating permit is being modified through a Part 70 Administrative Permit Amendment. This amendment is being performed pursuant to 326 IAC 2-7-11. The Administrative Permit Amendment will give the source the ability to operate the equipment that was approved for construction in Minor Source Modification 165-11525-00002.

County Attainment Status

The source is located in Vermillion County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Vermillion County has

been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

- (b) Vermillion County has been classified as attainment or unclassifiable for all pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	129.04
PM-10	101.01
SO ₂	222.18
VOC	0.04
CO	3.43
NO _x	82.14

- (a) This existing source is a major stationary source because the source had the potential to emit an attainment regulated pollutant at a rate of 250 tons per year or more, and it is not one of the 28 listed source categories. The source has an issued Part 70 permit, therefore, the control equipment at the facility is federally enforceable. The numbers listed in the table above reflect the potential emissions after controls. Prior to issuance of the Part 70 permit the source had the potential to emit PM and PM₁₀ at a rate greater than 250 tons per year.
- (b) These emissions are based upon emissions calculations in Part 70 Permit No. T165-7633-00002.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Kiln 3	1.44	1.25	20.88	0.04	0.61	6.29	--
PSD Significance Levels	25	15	40	40	100	40	—

This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this proposed modification.

State Rule Applicability - Individual Facilities

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source is a major source under 326 IAC 2-2 (PSD). Emissions from the reconstruction of Kiln 3 are below the PSD significance thresholds, therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

326 IAC 6-3-2 (Process Operations)

Pursuant to 326 IAC 6-3-2 (Process Operations), the particulate matter (PM) from Kiln 3 shall not exceed 1.5 pounds per hour when operating at a process weight rate of 460.87 pounds per hour.

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Based on calculations, Kiln 3 is in compliance with this requirement.

326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations)

Pursuant to 326 IAC 7-1.1-2(a)(1) (Sulfur Dioxide Emission Limitations) the sulfur dioxide emissions from Kiln 3 burning a coal and sawdust mixture shall be limited to 6.0 pounds per million Btu of coal. Therefore, the sulfur dioxide (SO₂) content of coal delivered to the kiln shall be limited to four and six fiftieths percent (4.12%) by weight .

Kiln 3 has a potential to emit SO₂ of 1.18 pounds per mmBtu. Based on calculations Kiln 3 is in compliance with this requirement.

326 IAC 7-2-1 (Sulfur Dioxide Emission Limitations)

Pursuant to 326 IAC 7-2-1 (Reporting Requirements), the source shall submit to the commissioner upon request: calendar month of average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rate in pounds per million Btu.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a

result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification are as follows:

1. The kiln operation has applicable compliance monitoring conditions as specified below:
 - (a) Visible emissions notations of the kiln stack exhaust shall be performed during normal daylight operations on days 2, 3, and 4 of the firing cycle when exhausting to the atmosphere. A trained employee will record whether emissions are normal or abnormal when exhausting to the atmosphere. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during days 2, 3, and 4 of the firing cycle. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

These monitoring conditions are necessary because the kiln must operate properly to ensure compliance with 326 IAC 6-3-2 (Process Operations) and 326 IAC 2-7 (Part 70).

Conclusion

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Administrative Permit Amendment No. 165-11642-00002.

Appendix A